

1 **CLAIMS**

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3 1. One or more computer-readable media comprising computer-  
4 executable instructions that perform the following when executed by one or more  
5 computers:

6 identifying a node of an extensible markup language (XML) document as  
7 editable using an editability element of an electronic-form template; and

8 determining operations permitted for the identified node using an operation  
9 element of the electronic-form template.

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11 2. The media of claim 1, wherein the instructions further perform a  
12 method comprising:

13 enabling selection of the operations through an electronic form;

14 receiving selection of one of the operations; and

15 performing the selected operation on at least one node of the XML  
16 document.

17  
18 3. The media of claim 2, wherein the one node of XML document  
19 comprises the identified node.

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21 4. The media of claim 2, wherein the one node of XML document  
22 comprises other nodes subordinate or sibling to the identified node.

23  
24 5. The media of claim 1, wherein the act of determining the operations  
25 permitted comprises determining a context in which the operations are permitted.

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2       **6.**    The media of claim 5, wherein the act of determining the context in  
3 which the operations are permitted comprises locating a character string of  
4 “container” in the editability element.

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6       **7.**    The media of claim 5, wherein the act of determining the context in  
7 which the operations are permitted comprises determining the context by locating  
8 a value associated with a character string of “container” in the editability element.

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10       **8.**    The media of claim 1, wherein the act of identifying comprises  
11 finding an XPath expression in the editability element and comparing the XPath  
12 expression to nodes of the XML document.

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14       **9.**    The media of claim 1, wherein the act of identifying comprises  
15 finding a character string of “xmlToEdit” and an XPath expression associated with  
16 the character string.

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18       **10.**   The media of claim 1, wherein the act of determining the operations  
19 comprises finding a character string of “editWith” and syntax associated with the  
20 character string that is usable to determine the operations.

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22       **11.**   The media of claim 10, wherein the syntax comprises a second  
23 character string of “component”.  
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1           12.    The media of claim 10, wherein the syntax comprises a second  
2 character string of "component", and a value of the second character string  
3 comprises a third character string of "xCollection", the third character string being  
4 usable to determine that the operations comprise insertion or deletion of a node  
5 corresponding to or sibling to the identified node.

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7           13.    The media of claim 10, wherein the syntax comprises a second  
8 character string of "component" and a value of the second character string  
9 comprises a third character string of "xOptional", the third character string being  
10 usable to determine that the operations comprise insertion or deletion of the  
11 identified node.

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13           14.    The media of claim 10, wherein the syntax comprises a second  
14 character string of "component" and a value of the second character string  
15 comprises a third character string of "xTextList", the third character string being  
16 usable to determine that the operations comprise modification, insertion or  
17 deletion of a node corresponding to or sibling to the identified node.

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19           15.    The media of claim 10, wherein the syntax comprises a second  
20 character string of "component", and a value of the second character string  
21 comprises a third character string of "xField", the third character string being  
22 usable to determine that the operations comprise textual editing of data of the  
23 identified node.

1           16.    The media of claim 15, wherein the syntax further comprises a  
2 fourth character string of "rich", the fourth character string being usable to  
3 determine that the operations comprise rich-text textual editing of data of the  
4 identified node.

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6           17.    The media of claim 15, wherein the syntax further comprises a  
7 fourth character string of "plain", the fourth character string being usable to  
8 determine that the operations comprise plain-text textual editing of data of the  
9 identified node.

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11           18.    One or more computer-readable media comprising computer-  
12 executable instructions that perform the following when executed by one or more  
13 computers:

14               presenting extensible markup language (XML) data of a node of a first  
15 XML document in an electronic form;

16               enabling one or more operations in the electronic form;

17               receiving selection of an operation of the one or more operations; and

18               modifying the XML data of the first XML document based on the received  
19 operation, wherein:

20                   the act of presenting comprises determining that the node is  
21 identified in a first element in a second XML document; and

22                   the act of enabling comprises determining that the operations are  
23 identified in a second element associated with the first element in the  
24 second XML document.  
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1           **19.**    The media of claim 18, wherein the act of presenting comprises  
2 presenting a blank data-entry field.

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4           **20.**    The media of claim 18, wherein the act of presenting comprises  
5 presenting a data-entry field having content, the content contained in the node.

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7           **21.**    The media of claim 18, wherein the act of determining that the node  
8 is identified comprises determining that the first element comprises a character  
9 string of "xmlToEdit".

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11          **22.**    The media of claim 18, wherein the act of determining that the node  
12 is identified comprises determining that a location of the node matches an XPath  
13 expression determinable from a value of an attribute on the first element.

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15          **23.**    The media of claim 18, wherein the act of determining that the node  
16 is identified comprises determining that the first element comprises a character  
17 string of "item" and that a value associated with that character string is usable to  
18 determine an XPath expression matching a location of the node.

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20          **24.**    The media of claim 18, wherein the act of determining that the  
21 operations are identified comprises determining that the second element comprises  
22 a character string of "editWith".

1           **25.**    The media of claim 18, wherein the act of determining that the  
2 operations are identified comprises determining that the second element comprises  
3 a character string of “component” and a value associated with the character string,  
4 and using the value to determine the operations.

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6           **26.**    The media of claim 18, wherein the act of presenting comprises  
7 determining that the second XML document comprises a namespace having a  
8 namespace resource indicator having a character string of either “microsoft” or  
9 “infopath”.

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11           **27.**    The media of claim 18, wherein the first XML document comprises  
12 data not represented with XML.

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14           **28.**    The media of claim 18, wherein the act of determining that the  
15 operations are identified comprises determining that the second element comprises  
16 an attribute indicating that the operations comprise insertion or deletion of the  
17 identified node, or of a sibling node to the identified node.

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19           **29.**    The media of claim 28, wherein the value of the attribute comprises  
20 a character string of “xCollection”.

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22           **30.**    The media of claim 28, wherein the value of the attribute comprises  
23 a character string of “xOptional”.

1           31.    The media of claim 28, wherein the act of determining that the  
2 operations are identified further comprises determining: (a) that the second  
3 element indicates that the operations comprise insertion of the nodes; and (b) a  
4 location where the nodes are to be inserted based on one or more character strings  
5 in the first element, the character strings being treatable as an XPath expression.  
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7           32.    The media of claim 28, further comprising determining a location  
8 for the insertion with an XPath expression associated with a character string of  
9 "item" in the first element.  
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11          33.    The media of claim 28, further comprising determining the  
12 identified node or the sibling of the identified node using a child element of the  
13 second element, the child element comprising a character string  
14 "chooseFragment."  
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16          34.    The media of claim 33, further comprising determining a location  
17 for inserting the identified node or the sibling of the identified node using an  
18 XPath expression associated with an additional character string of the child  
19 element.  
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21          35.    The media of claim 34, wherein the additional character string is  
22 associated with a character string "parent."  
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1           **36.**    The media of claim 18, wherein the act of determining that the  
2 operations are identified comprises determining that the second element comprises  
3 an attribute indicating that the operations comprise addition to or alteration of data  
4 within the identified node.

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6           **37.**    The media of claim 36, wherein the act of determining that the  
7 second element comprises the attribute comprises determining that a value of the  
8 attribute comprises a character string of "xField".

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10          **38.**    The media of claim 37, wherein the act of determining that the  
11 operations are identified further comprises determining that the second element  
12 comprises a second attribute having a character string of "type".

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14          **39.**    The media of claim 38, wherein the act of determining that the  
15 operations are identified further comprises determining that the second attribute is  
16 associated with a character string of "rich" and the act of enabling one or more  
17 operations comprises enabling creation and modification of rich-text-data within  
18 the identified node.

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20          **40.**    The media of claim 38, wherein the act of determining that the  
21 operations are identified further comprises determining that the second attribute is  
22 associated with a character string of "plain" and the act of enabling one or more  
23 operations comprises enabling creation and modification of plain-text-data within  
24 the identified node.  
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1           41. One or more computer-readable media comprising computer-  
2 executable instructions that perform the following when executed by one or more  
3 computers:

4           presenting a first extensible markup language (XML) document as an  
5 electronic form having one or more data-entry fields representing one or more  
6 nodes of the first XML document; and

7           enabling an operation to be performed on one of the nodes through its data-  
8 entry field, wherein:

9           the one node is identified in an element comprising a character string  
10 of "xmlToEdit" in a second XML document; and

11           the operation enabled to be performed on the one node is identified  
12 in a child element of the 'xmlToEdit' element, the child element comprising a  
13 character string of "editWith".

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15           42. The media of claim 41, wherein the one node is identified by an  
16 XPath expression associated with a value of an "item" attribute in the 'xmlToEdit'  
17 element.

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19           43. The media of claim 41, wherein the operation to be performed is  
20 identified by a value of a "component" attribute in the child element.

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22           44. The media of claim 41, wherein the act of enabling the operation  
23 comprises enabling the operation only if the electronic form comprises a  
24 representation of a context node, and wherein the context node is identified in a  
25 "container" attribute of the 'xmlToEdit' element

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2       45.     An apparatus comprising:  
3       means for identifying an editable node of an extensible markup language  
4 (XML) document by analyzing an editability element of an electronic-form  
5 template; and  
6       means for determining an operation permitted for the editable node by  
7 analyzing an operation element of the electronic-form template.  
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9       46.     The apparatus of claim 45, further comprising:  
10       means for enabling selection of the operation;  
11       means for receiving selection of the operation; and  
12       means for performing the operation on the editable node or other nodes  
13 subordinate or sibling to the editable node.  
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15       47.     The apparatus of claim 45, wherein the means for identifying the  
16 editable node comprises means for finding a character string of "xmlToEdit" and  
17 an XPath expression associated with the character string.  
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19       48.     The apparatus of claim 45, wherein the means for determining the  
20 operation permitted comprises means for determining a context in which the  
21 operation is permitted by locating a value associated with a character string of  
22 "container" in the editability element.  
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1           **49.**    The apparatus of claim 45, wherein the means for determining the  
2 operation comprises means for finding a character string of “editWith” and a  
3 syntax associated with the character string that is associated with the operation.  
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